



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Note: Future reports may be reformatted to better summarize and consolidate information.

Hurricane Harvey Update (notes: Hurricanes Irma/Maria report starts on page 2; updated information highlighted.)

EPA HQ:

Water Desk Staffing for the coming week is as follows:

Monday 9/25: Nushat Thomas

Tuesday 9/26: Brian Pickard

Wednesday 9/27-Thursday 9/28: Jeff Fencil

Friday 9/28: Kevin Tingley

Federal Activities:

September 21, 2017 was the last day for response activities with no state cost-share. Cost-share increased to 10% at midnight on September 22, 2017. Response efforts associated with Hurricane Harvey have transitioned to recovery.

EPA Activities: Region 6:

Drinking Water / Wastewater Assessments

Drinking water and wastewater assessment teams completed their emergency assessments of community water systems and have demobilized. The information below is from the Texas Commission on Environmental Quality website at <https://www.tceq.texas.gov/response/hurricanes>.

Drinking Water: From TCEQ website as of 9/22/17.

	Number of Drinking Water Systems	Population
Fully Operational	2,233	920,988
Boil Water Notices	46	14,446
Shutdown	5	1,088

Wastewater and Sewage: From TCEQ website as of 9/22/17.

	Number of Wastewater Treatment Plants
Fully Operational	1,719
Inoperable	9
Operating with Issues	25



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Hurricane Irma/Hurricane Maria Update

On 9/25/2017 at 0500 EDT, Hurricane Maria was 350 miles south-southeast of Cape Hatteras, NC. Maximum sustained winds were 80 mph. Hurricane-force winds extend outward up to 70 miles from the center and tropical-storm-force winds extend outward up to 230 miles. The Hurricane may track less than 200 miles east of the Outer Banks Wednesday. Tropical storm force winds may begin impacting eastern North Carolina late today, and eastern Virginia and the Delmarva Tuesday into Wednesday.

Hurricane Maria made landfall at Yabucoa in Puerto Rico's southeast shortly after 6 a.m. on 9/20/2017 with winds as strong as 155 m.p.h. It crossed the United States Virgin Islands as a Category 5 storm, then weakened to a Category 4 storm as it passed over PR. The eye of the hurricane left Puerto Rico at noon between the coast of the municipalities of Barceloneta and Arecibo. Power is out throughout the island. Initial assessments are ongoing. The Governor said: "Our island is destroyed."

USVI – There are reports of widespread damage on St. Croix as a result of Hurricane Maria. EPA OSC on St. Croix reports intermittent email and phone service. Very severe tree and power pole damage. The cargo section of the airport destroyed. Roads are barely passable.

With the approach of Hurricane Maria, all EPA USVI/PR response personnel were repositioned to the U.S. mainland with exceptions for an EPA rep in St. Croix and others who sheltered in place in the USVI and PR. However, as of September 24, personnel information from the EPA re-deployment plan was provided to FEMA so flights and lodging needs can be coordinated for the first wave of EPA responders.

- o Puerto Rico: 120 people (50 people on 9/24 + 50 people on 9/30 + 20 people on 10/7).
- o St Croix: 88 people (20 people on 9/24 + 34 people on 9/28 + 34 people on 10/2)
- o St Thomas: 68 people (34 people on 9/28 + 34 people on 10/2)

Flights continued to be pushed. The priority is still the life-saving and life sustaining mission. Region 2 will keep pursuing FEMA flights, however they are also coordinating with the U.S. Coast Guard for possible flight space as they move people and equipment into the U.S. Caribbean. Suitable lodging on PR has become a challenge since most hotels will not open until 10/1. Region 2 will continue to pursue berthing space on the various FEMA supported vessels arriving in PR.

Region 2 continues to reach out and contact Caribbean Environmental Protection Division (CEPD) personnel post storm. In Puerto Rico, communications are very difficult and a majority of employees have not yet been accounted for. Region 2 is in contact with the Director and Deputy Director; they have been able to contact thirty-one (31) of fifty-six (56) employees.



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

In the USVI both employees are safe and in contact with EPA responders. CID has made contact with only one of their two agents in PR. CID/NCERT deploying 2 agents to PR separate from the EPA response action to assist CEPD in locating employees. Two CID/NCERT agents arrived in PR on 9/24 to assist CEPD in locating EPA employees. This deployment is separate from the EPA Hurricane response action.

CEPD Guaynabo office building received no visible damage. The building has water and is running on generator power. City View Plaza management has indicated that due to limitations in access to gas supply, generator use in the building will start operating with limitations, they will inform Region 2 of the upcoming operating schedule. CEPD leadership worked from the office on 9/24 reported that data and voice services have been restored to the facility. Cell phone services have been restored as well.

The CEPD offices in St. Thomas, USVI and Vieques, PR have not been assessed post Hurricane Maria. Priorities will include those servicing hospitals and sensitive populations.

Local/State Activities:
Puerto Rico:

There is a 100% power outage in PR. The Director of PREPA indicated that the power system is non-functioning. It faced severe and catastrophic structural damage in the distribution lines and it will take many months for repairs and reconstruction.

The Toa Vaca dam, which serves as a drinking water reservoir, may fail. PRASA is working to prevent overflows.

The President has signed Emergency Declaration FEMA-3391-EM for the Commonwealth of Puerto Rico for Hurricane Maria.

U.S. Virgin Islands (USVI):

FEMA has indicated that there will be two power-supplied labs: one in St. Thomas (supplied with a functioning generator) and one in St. Croix (pending generator installation).

Emergency call centers will be activated in both island districts on Monday. The call centers will be the primary means by which residents can report service interruptions as reconstruction and restoration takes shape. The Emergency Call Center number on St. Croix is 340-773-0150 and on St. Thomas - St. John, the number is 340-774-1424. The centers will operate daily from 7 a.m. – 11 p.m.



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

As of 1400 ET on 9/22/2017, FEMA reports that the drinking water facilities on St. Thomas and St. Croix have been re-energized.

The President has signed Emergency Declaration FEMA-3390-EM for the Territory of the U.S. Virgin Islands for Hurricane Maria.

All Region 4 State EOCs, with the exception of Florida, are back to normal operations.

Federal Activities:

FEMA:

The FEMA RRCC in Colt's Neck NJ has transferred all operations from that location to the NRCC in Washington, D.C. Personnel are developing plans for the resumption of post-storm activities, including assessments at regulated facilities and NPL/Removal sites.

On 9/20/2017, The President has signed a Disaster Declaration FEMA-4340-DR for the Territory of the U.S. Virgin Islands for Hurricane Maria. On 9/20, The President has signed a Disaster Declaration FEMA-4339-DR for Puerto Rico.

Effective at 2330 on 9/20/2017, the FEMA Region IV Regional Response Coordination Center (RRCC) transitioned from Level II (full activation) to normal operations. All members of the RRCC were released, including those staffed under ESF-10.

EPA Activities:

Region 2:

The REOC Planning and Operations Sections are using Hurricane Irma assessment plans to develop post-Hurricane Maria plans for the assessment of fixed facilities, Superfund sites, critical infrastructure, areas of special concern, and debris management.

EPA's six-person water assessment team arrived in St. Croix on 9/24/2017 at 1300 via helicopter to address drinking water needs and conduct wastewater assessments at facilities that service hospitals.

On 9/22/2017, EPA will meet with Harold Mark of DPNR to develop list of water purveyors to sample. Region 2 will prioritize active systems and high usage systems.

Region 2 will check on WAPA to see if they have reinitiated their own chlorine residual and bacteriological test.

Region 2 will initiate drinking water sampling and analysis using field test kits (Coliform bacteria only). They



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

will use Colilert kits to sample FEMA hotels, ice manufacturers and possibly WAPA to get a sense of water quality.

On 9/23/2017, EPA issued an order to the Federal Emergency Management Agency (FEMA) and the Department of Defense (DOD) that provides direction on supplying of clean drinking water in the U.S. Virgin Islands in response to impacts to the island's drinking water system from Hurricane Maria and Hurricane Irma. The order authorizes FEMA and DOD to install and operate temporary water treatment units that will provide a supply of clean drinking water. U.S. Virgin Islands public water systems are currently not in operational condition. The lack of clean alternative water supplies has created the potential for significant public health impacts. USVI public water systems have been significantly impacted by Hurricanes Maria and Irma and subsequent flooding, including by a loss of electrical power, and are not yet fully able to provide adequately treated water to meet the needs of those affected areas. EPA is monitoring environmental and public health conditions across the U.S. Virgin Islands and Puerto Rico and is working closely with federal, territorial and local officials to ensure impacts from the hurricanes are addressed in order to protect public health. The order is at <https://response.epa.gov/sites/12403/files/USVI%20SDWA%20Order%20Sept%202023.pdf>.

On 9/23, EPA announced that it will exercise enforcement discretion for mobile power generators being imported into the United States that will be used as emergency sources of power in Puerto Rico as a result of Hurricane Maria. Under this "no action assurance," EPA will not pursue enforcement actions for certain violations of the Clean Air Act for mobile power generators being imported for use in Puerto Rico that have not been certified to meet U.S. pollution control standards. EPA's no action assurance was issued at the request of the Governor of Puerto Rico as preliminary information indicates extreme damage to Puerto Rico's power grid, including near-total destruction to power transmission. This no action assurance covers mobile power generators that are imported for use in Puerto Rico until January 31, 2018. EPA policy allows the Agency to issue no action assurances in cases where it is necessary to avoid extreme risks to public health and safety and where no other mechanism can adequately address the matter. EPA believes that the exercise of enforcement discretion in these circumstances is in the public interest and will help address the emergency circumstances in Puerto Rico.

The National Disaster Recovery Framework (NDRF) has not yet been activated in either PR or the VI. There is an expectation that it will be activated as soon as possible and therefore all partners are being engaged for awareness, planning and visibility. EPA has already provided data as part of the advanced evaluation and will continue to do so. All 6 Recovery Support Functions including Infrastructure Systems, are expected to be stood up for both PR and the VI.



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Region 4:

The EPA Region 4 Water Protection Division (WPD) received funding totaling \$75,000 under an ESF-3 MA sub-task to support the U.S. Army Corps of Engineers (USACE) drinking water and wastewater facility assessments. The WPD continues to coordinate with the Florida Department of Environmental Protection (FDEP) and the USACE. The U.S. Army Corps of Engineers' (USACE) request for additional ESF-3 support has been fulfilled.

As of 9/25/2017, the USACE and EPA Water Protection Division (WPD) continue to assist FDEP in assessing the status of drinking water and wastewater facilities. The Florida City Water Team relocated to Key Largo and will meet with the Key Largo City Engineer today to discuss the scope of work. The Naples Team met with FEMA to discuss remaining mission requirements. The Team will assess a nonoperational system in Glades County today. Region 4 FAST, the USACE/EPA Naples Water Team, and FDEP will hold a conference call today to finalize the plan to assess the status of 3,561 non-community public water systems.

The Region 4 Facility Assessment Support Team (FAST), completed 934 call-down assessments as of September 21st. EPA Water Team performed an assessment of the Waste Water Treatment Plant(WWTP) in Everglades City on 9/21/2017. The USACE/EPA Water Team completed assessments in Everglades City and redeployed, 9/22/2017, to Key Largo to assess the WWTP. The USACE/EPA Water Team inspected booster stations along the drinking water pipeline to Key West.

Updated information is below under 'Drinking Water and Wastewater System Status – Florida'

Drinking Water and Wastewater System Status

Region 2:

Puerto Rico System Status.

CEPD is waiting to hear back from PRASA on drinking water facilities' statuses, and plans to begin field inspections on 9/26/17 of plants near the San Juan Airport. CEPD also will begin attempting contact with non-PRASA facilities on 9/26/2017. PR also currently has an island-wide boil water order.

FAA wants to drill a well at one of their facilities near the San Juan Airport. The main purpose of the well is to supply water to their HVAC systems, but they also want to use it for their staff of 40 to 60 people. They can use a reverse osmosis system to treat the water. Region 2 is waiting for more information from FAA. Eduardo Gonzalez has been working on a PR version of the SDWA order we issued for USVI.

As of 1100 EST on 9/23/2017; 458,459 PRASA clients or 42% of the population is without drinking water service. This does not include over 200 non-PRASA systems without power, which account for 4% of the PR



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

population. Generators are being used to power drinking water facilities and may run out of gas, and additional people will lose drinking water. PR has an island-wide boil water order. Region 2 has locations for all these facilities and will transmit in a spreadsheet with the information as soon as it is received.

PRASA labs are not functioning due to power and damage issues. PRASA has people to sample but no labs. PRDOH has laboratory capability, but needs growth media and other supplies.

Total Number of Publicly-Owned Wastewater Treatment Plants (POTWs) Puerto Rico			
	NPDES Permitted Facilities		State Permits (Non-NPDES)
	POTW	Non-POTW (Industrial)	
Operational:	9	Unknown	Unknown
Partially Operational:	0	Unknown	Unknown
Non Operational:	Unknown	Unknown	Unknown
Unknown:	24	Unknown	Unknown
Totals:	52	Unknown	Unknown
Comments: Data is compiled from the spreadsheet sent by Region 2 Operational Sewer Report			
<p><i>Operational: Facility & associated collection system is properly conveying, and effectively providing wastewater treatment, in accordance with applicable permit conditions and regulations. (Operating on full or backup generator power.)</i></p> <p><i>Partially Operational: Facility and/or associated collection system is properly conveying and providing wastewater treatment at a compromised capacity, i.e. one or more treatment train components are non-operational, one or more lift stations are non-operational, etc.</i></p> <p><i>Non Operational: Facility and/or associated collection system is not providing wastewater treatment in accordance with applicable permit conditions and regulations.</i></p> <p><i>Unknown: Status of facility unknown at this time</i></p>			



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Virgin Islands Drinking Water Status: <http://www.viwapa.vi>

EPA SDWA order expires on 10/8/17. As 9/24/2017 the following information has been reported:

St. Croix: Both the Contentment & Richmond pump stations are on line on St. Croix. Potable water service is being provided to some locations while the Kingshill tank is gaining additional storage. Once functional, potable water will be pumped to St. Croix's west end and allow the Kingshill tank to gain storage. The tank has been emptied by an apparent leak which developed during the hurricane. Currently, there are 7.5 million gallons of water on St. Croix which is a three-day water supply.

St. John: Water service is available throughout Cruz Bay. St. John has three days of emergency water storage.

St. Thomas: Potable water service has been restored to all east end communities. Service has also been restored to the town district including Estate Bakkeroe. Crews continue to work to restore service to Government Hill, Estate Thomas, Savan, Bergs Home, and Contant Knolls housing community. St. Thomas has two days of water storage.

On 9/23/17, EPA Region 2 issued an order pursuant to the SDWA that authorized FEMA/DOD to pump drinking water to the USVI. FEMA/DOD are working to deploy 4 reverse osmosis units in St Croix to deliver drinking water to the following impacted areas:

- Stoney Ground
- Cane Bay
- Altima
- Cramer Park

DPNR wants EPA to conduct sampling, especially bacteria, and analysis. They also would like any ice being brought to the USVI analyzed for bacteria, at a minimum.

The REOC was able to get some generators shipped on 9/23/17 to the USVI to help power DPNR and WAPA labs. There is a verbal indication of a boil water order on USVI.

As of 1400 ET on 9/22/2017 FEMA reports that the drinking water facilities on St. Thomas and St. Croix have been reenergized.

The Seven Seas water production facility is fully operational on St. Thomas. Electrical service has also been restored to the Donoe pump station and storage is being replenished there as well as at the storage tanks on Sara Hill.

There is no information on wastewater facility status in USVI at this time.



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Region 4:

Florida:

Boil Water Notices (BWN): Boil water notices and advisories are published on the Florida Department of Health's website (<http://www.floridahealth.gov/environmental-health/drinking-water/boil-water-notice.html>). As of 1600 ET, the web site lists 478 BWN issued since 9/11/2017, of which 305 have been rescinded, resulting in 173 active BWN. The website reflects a lower number of BWN than in the table below, which was provided by Region 4 at 0900 ET.

Water and Wastewater System Assessments:

The Florida City Water Team relocated to Key Largo and will meet with the Key Largo City Engineer today to discuss the scope of work. The Naples Team met with FEMA to discuss remaining mission requirements. The Team will assess a nonoperational system in Glades County today. Region 4 FAST, the USACE/EPA Naples Water Team, and FDEP will hold a conference call today to finalize the plan to assess the status of 3,561 non-community public water systems.

Water and wastewater facilities continue to submit their requests for assistance. The WPD compiled a status of community drinking water systems (CWS) and POTW that may be used during post-storm damage assessment in Florida (see the two tables below).



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Total Number of Community Drinking Water Systems (CWS) and Total Population Served				
	Large CWS (Over 3,300)		Small CWS (under 3,300)	
	# Systems	Population Served	# Systems	Population Served
Operational:	390	19,101,966	1,179	678,066
Partially Operational:	6	188,818	15	16,284
Non Operational:	0	0	6	456
Unknown:	0	0	44	15,747
Totals:	396	19,290,784	1,24	710,553
Boil Water Notices	173 (478 issued – 305 rescinded)			
Comments: Data is compiled from the State of Florida's StormTracker system. The inventory of public water systems in StormTracker consists of all 1,630 Community Water Systems (CWS) and 11 non-community public water systems regulated by the State. These facilities were identified by Florida as the most critical for operational status determinations following major disasters. For convenience, all 1,641 facilities are reported as “CWS” in this table.				
<i>Operational: Facility producing drinking water for greater than 90% of customers under normal</i>				
<i>Partially Operational: Facility producing drinking water under adverse conditions and/or</i>				
<i>Non Operational: Facility not producing or supplying drinking water</i>				
<i>Unknown: Status of facility unknown at this time</i>				



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Total Number of Publicly-Owned Wastewater Treatment Plants (POTWs) All Florida Counties			
	NPDES Permitted Facilities		State Permits (Non-NPDES)
	POTW	Non-POTW (Industrial)	
Operational:	143	242	1,702
Partially Operational:	2	1	41
Non Operational:	0	0	93
Unknown:	0	0	173
Totals:	145	243	2,009
<p>Comments: Data is compiled from the State of Florida's StormTracker system. The NPDES universe tracked in StormTracker represents a subset of the total inventory of NPDES permitted systems that are identified by the State of Florida as the most critical for operational status determinations following major disasters.</p> <p>This report shows that 99% of the POTWs are Operational, no change since last report of 99%. This report shows that 99% of the Non-POTW NPDES Permitted Facilities tracked in StormTracker are Operational, no change since last report of 99%.</p> <p><u>Operational:</u> Facility & associated collection system is properly conveying, and effectively providing wastewater treatment, in accordance with applicable permit conditions and regulations.</p> <p><u>Partially Operational:</u> Facility and/or associated collection system is properly conveying and providing wastewater treatment at a compromised capacity, i.e. one or more treatment train components are non-operational, one or more lift stations are non-operational, etc.</p> <p><u>Non Operational:</u> Facility and/or associated collection system is not providing wastewater treatment in accordance with applicable permit conditions and regulations.</p> <p><u>Unknown:</u> Status of facility unknown at this time</p>			



OW Management Report for Hurricane Harvey and Hurricane Irma – September 24, 2017
EOC Water Desk

Georgia:

This table summarizes community water system status within Georgia as per the last state report (last update: 9/20/2017).

Total Number of Community Drinking Water Systems (CWS) and Total Population		
	#	Population
Operational:	186	7,203,619
Operational w/	8	53,917
Non Operational:	3	40,322
Unknown:	**	2,424,980
Totals:	1,749	8,917,820
Boil Water Notices	75 Boil Water Advisories reported to the SOC.	
Comments: Data is compiled from data collected by Georgia EPD drinking water staff, EPD regional offices and the ESF-3 Water Desk at the Georgia SOC. The inventory of public water systems in <i>Georgia</i> consists of all 1,749 Community Water Systems (CWS). **EPD has provided status updates of all community water systems with surface water sources. All community water systems using ground water are being contact by EPD District Offices and associated resources requests are forwarded to the SOC ESF-3 desk. All community water systems using surface water as a source have been assessed		
<u>Operational:</u> Facility producing drinking water for greater than 90% of customers under normal operating conditions.		
<u>Operational with Conditions:</u> Facility producing drinking water under consumer advisory, e.g., boil water advisories issued by water systems.		
<u>Non Operational:</u> Facility not producing or supplying drinking water		

Federally Recognized Tribes:

No significant updates were provided by the Region 4 Tribes during the reporting period.